Chapter 11 Notes\*\* What you need to know for test and trimester \*\*

* A chemical bond is a force that holds two or more atoms together.
* When we talk about chemical bonding, always think of the elements Lewis Dot Diagram.
* The number of unpaired electrons/dots equals the number of bonds that can be made.

Covalent Bonds

* A chemical bond where the valence electrons are shared between atoms
* SHARING VALENCE ELECTRONS
* Occurs between nonmetals and nonmetals
* Three types:
  + Single covalent bond: 1 pair of electrons are shared= 2 valence electrons
  + Double covalent bond: 2 pairs of electrons are shared= 4 valence electrons
  + Triple covalent bond: 3 pairs of electrons are shared= 6 valence electrons
    - To determine these bonds: it is only between 2 atoms
* Water is a polar molecule. In a covalent bond, one atom can attract the shared electrons more strongly than the other atom can.
  + In a water molecule, the oxygen atom attracts the shared electrons more strongly than the hydrogen atom does.
  + Shared electrons are pulled closer to the oxygen atom
  + Oxygen atom has a partial negative charge
  + Hydrogen atom has a partial positive charge
    - This defines a polar molecule.

Ionic Bonds

* The attraction between positively and negatively charged ions in an ionic compound
* Occurs between metals and nonmetals
* Valence electrons are either gained or lost
  + Nonmetals tend to gain the electrons
  + Metals tend to lose the electrons
* Sodium and Chlorine is your example
  + Sodium gives the electron= becomes a positive ion
  + Chlorine gains the electron= becomes a negative ion
* This attraction between negative and positive is what creates the bond

Metallic Bonds

* Bond formed when many metal atoms share their pooled valence electrons
* Occurs between metals and metals